Arthur J. Munson. Oct. 23. 1925.

ALLEN

Cold-drawn

Hollow Set Screws
Socket Head Cap Screws
Socket Wrenches
Tap Extensions
Pipe Plugs

Allen process sockets

THE ALLEN MFG. COMPANY
HARTFORD, CONN.

DIRECTORY OF

ALLEN Cold-Drawn Products


ALLEN PROCESS
LOOK FOR THE
CORNER TRIANGLES
SOCKETS
TRADE MARK

By way of

Introduction

THIS BOOK gives our customers and other friends a "group picture" of products with cold-drawn sockets.

The Allen process applies alike to Hollow Set Screws, Socket Head Cap Screws, Pipe Plugs, Tap Extensions and Socket Wrenches.

To these products, one and all, the cold-drawn socket gives an extra and super strength, inasmuch as in all of them the socket is the center of strain.

In a Hollow Screw the Allen process means (at least) a 30% stronger article. In a wrench socket it means a practically *unbreakable* article.

Basically, then, the cold-drawn socket is the thing offered under the various product-headings which follow. The most durable socket being the sure foundation for the most durable article *in* these classes.

Your selection of ALLEN (Socket) Products secures quality and value that can no more be duplicated than the patented process by which they are made.

Exclusive Features of Set Screws

ALLEN SAFETY SET SCREWS and allied products derive their special features from a patented process, which increases the strength of the metal over 30%.

By *tons pressure* even on the smallest screws, the cold steel of the "blanks" (machined from solid bar stock) is compressed around a hex. punch, drawn through a die to the finished size, simultaneously forming the socket.

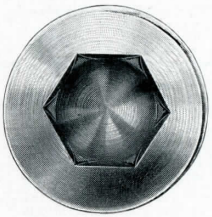
This patented Allen process leaves *no chips* in the bottom of the hole; no wasted length. At one stroke it insures perfect fit of the wrench—an essential feature—and increased density of the socket-wall.

While the resulting strength shows up most remarkably in the Hollow Set Screws, particularly in the smaller sizes, it is also the outstanding feature of Allen Socket Head Cap Screws, Socket Wrench Sets and other products.

The strength of the cold-drawn sockets is reinforced by special and scientific heat-treating, applied individually to the various styles and sizes of sockets in the Allen products.

Hexagon Holes

—and why "Allens" have them:



Because hexagon sockets (with a slight taper) insure a tight fit for the wrench — and *tightest* at the *bottom* of the hole, where the screw can stand the greatest strain.

Because hex-shaped sockets make it easy to locate the wrench properly in the hole when placed in a blind position, or in "close" work.

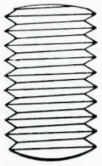
Because hexagon sockets take the form of wrench that most consistently comes *true*, and distributes the strain most evenly on the walls of the screw. (Allen wrenches get an extra drawing to insure accuracy of "hex.")

And because, where a wrench is missing at a job, the hex socket may be quickly fitted by grinding *any* available piece or shape of stock.

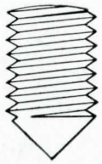
(Scientific heat-treating gives Allen hex. sockets the hardest and deepest "case" around a tough core. Special heat-treatment for each diameter and style of screw. This keeps the socket a perfect hex, however much used.)

LIST PRICES AND SIZES

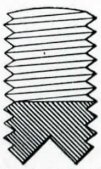
ALLEN SAFETY SET SCREWS



ROUND POINT



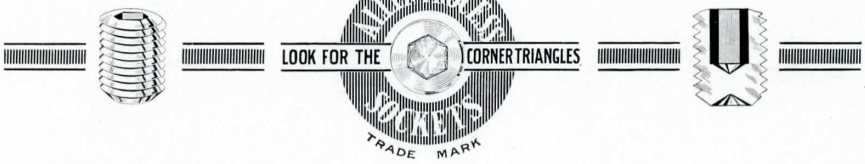
CONE POINT



CUP POINT

DIAMETER OF SCREWS									
		1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16
LENGTH OVER ALL	1/4	5.00	5.50	6.50	8.50				
	5/16	5.00	5.00	6.25	8.00	9.25			
	3/8	5.00	5.00	5.00	7.50	8.75	12.00	13.50	
	7/16	5.00	5.00	5.00	6.00	8.75	11.00	13.00	
	1/2	5.50	5.60	5.00	6.00	7.00	10.00	12.50	15.00
	9/16	5.50	5.60	6.95	7.00	7.00	8.00	12.50	15.00
	5/8	5.50	5.60	6.95	7.00	7.00	10.00	10.00	15.00
	3/4	6.00	6.20	7.65	8.30	9.65	11.10	10.00	12.00
	7/8	6.00	6.20	7.65	8.30	9.65	11.10	12.00	13.00
	1	6.50	6.80	8.35	9.10	10.55	12.20	14.70	12.00
	1 1/8	6.50	7.40	8.35	9.10	10.55	12.20	14.70	16.50
	1 1/4	7.00	8.00	9.05	9.90	11.45	13.30	15.80	18.00
	1 3/8	7.50	8.00	9.75	10.70	12.35	14.40	16.90	19.50
	1 1/2	7.50	8.00	9.75	10.70	12.35	14.40	16.90	19.50
	1 5/8	8.00	8.60	10.45	11.50	13.25	15.50	18.00	21.00
	1 3/4	8.00	8.60	10.45	11.50	13.25	15.50	18.00	21.00
	2	8.50	9.20	11.15	12.30	14.15	16.60	19.10	22.50
	2 1/4	9.00	9.80	11.85	13.10	15.05	17.70	20.20	24.00
	2 1/2	9.50	10.40	12.55	13.90	15.95	18.80	21.30	25.50
	2 3/4	10.00	11.00	13.25	14.70	16.85	19.90	22.40	27.00
	3	10.50	11.60	13.95	15.50	17.75	21.00	23.50	28.50
	3 1/4	11.00	12.20	14.65	16.30	18.65	22.10	24.60	30.00
	3 1/2	11.50	12.80	15.35	17.10	19.55	23.20	25.70	31.50
	3 3/4	12.00	13.40	16.05	17.90	20.45	24.30	26.80	33.00
	4	12.50	14.00	16.75	18.70	21.35	25.40	27.90	34.50
U.S.S. THREADS PER IN.		20	18	16	14	13	12	11	11
S.A.E. THREADS PER IN		28	24	24	20	20	18	18	16
WHITWORTH THREADS PER IN.		20	18	16	14	12	12	11	11
SIZE OF HEX. HOLE		1/8	5/32	3/16	7/32	1/4	1/4	5/16	5/16
WRENCHES FREE PER 100 SCREWS		8	8	8	8	8	8	8	8
EXTRA WRENCHES EACH		.03	.04	.05	.06	.07	.07	.08	.08

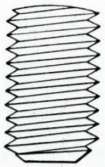
Longer Lengths than listed require a special quotation

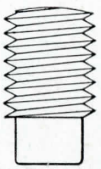


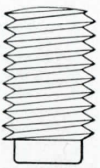
LIST PRICES AND SIZES

ALLEN SAFETY SET SCREWS

LENGTH OVER ALL	DIAMETER OF SCREWS								
	3/4	13/16	7/8	15/16	1	1 1/8	1 1/4	1 3/8	1 1/2
1/4									
5/16									
3/8		PRICES ARE PER 100 SCREWS WRENCHES INCLUDED							
7/16									
1/2	15.00								
9/16	15.00								
5/8	15.00								
3/4	12.00	20.00	20.00	25.00	25.00				
7/8	13.00	15.00	15.00	25.00	25.00				
1	12.00	15.00	15.00	20.00	20.00				
1 1/8	16.50	18.00	18.00	25.00	25.00	35.00			
1 1/4	18.00	20.00	20.00	22.00	22.00	36.65	40.00		
1 3/8	19.50	23.55	23.55	31.75	31.75	38.30	44.00	45.00	
1 1/2	19.50	25.55	25.55	31.75	31.75	39.95	48.00	50.00	50.00
1 5/8	21.00	27.25	27.25	34.00	34.00	41.60	52.00	55.00	56.00
1 3/4	21.00	27.25	27.25	35.00	35.00	42.25	56.00	60.00	62.00
2	22.50	28.95	28.95	36.25	36.25	45.55	60.00	65.00	68.00
2 1/4	24.00	30.60	30.60	38.50	38.50	48.85	64.00	70.00	74.00
2 1/2	25.50	32.35	32.35	40.75	40.75	52.15	68.00	75.00	80.00
2 3/4	27.00	34.05	34.05	43.00	43.00	55.45	72.00	80.00	86.00
3	28.50	35.75	35.75	45.25	45.25	58.75	76.00	85.00	92.00
3 1/4	30.00	37.45	37.45	47.50	47.50	62.05	80.00	90.00	98.00
3 1/2	31.50	39.15	39.15	49.75	49.75	65.35	84.00	95.00	104.00
3 3/4	33.00	40.85	40.85	52.00	52.00	68.65	88.00	100.00	110.00
4	34.50	42.55	42.55	54.25	54.25	71.95	92.00	105.00	116.00
U.S.S. THREADS PER IN.	10	10	9	9	8	7	7	6	6
S.A.E. THREADS PER IN	16		14		14	12	12	12	12
WHITWORTH THREADS PER IN.	10	10	9	9	8	7	7	6	6
SIZE OF HEX. HOLE	3/8	3/8	1/2	1/2	9/16	9/16	5/8	5/8	5/8
WRENCHES FREE PER 100 SCREWS	8	8	8	4	4	4	4	4	4
EXTRA WRENCHES EACH	.10	.10	.12	.12	.15	.15	.20	.20	.20


FLAT POINT

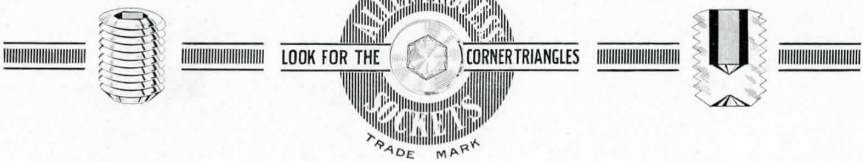

DOG POINT


HALF DOG POINT

Longer Lengths than listed require a special quotation

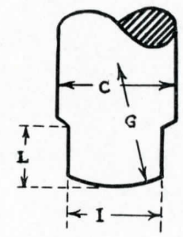
Packing Weights

Size	No. in Pkg.	Weight	Size	No. in Pkg.	Weight
1/4 x 1/4	200	1 lbs. 10 oz.	7/16 x 1	50	1 " 12 "
1/4 x 5/16	200	12 "	1/2 x 1/2–13	100	2 " 4 "
1/4 x 3/8	200	14 "	1/2 x 5/8–13	100	2 " 12 "
1/4 x 1/2	200	1 lbs. 2 "	1/2 x 3/4	100	3 " 4 "
1/4 x 5/8	100	12 "	1/2 x 7/8	100	4 "
1/4 x 3/4	100	14 "	1/2 x 1	100	4 " 8 "
1/4 x 7/8	100	1 "	9/16 x 9/16	100	3 " 2 "
1/4 x 1	100	1 " 2 "	9/16 x 5/8	100	3 " 8 "
5/16 x 5/16	200	1 " 2 "	9/16 x 3/4	100	4 " 4 "
5/16 x 3/8	200	1 " 6 "	9/16 x 1	100	5 " 12 "
5/16 x 1/2	200	1 " 12 "	5/8 x 1/2	50	1 " 12 "
5/16 x 5/8	200	2 " 2 "	5/8 x 5/8	50	2 " 2 "
5/16 x 3/4	100	1 " 6 "	5/8 x 3/4	50	2 " 8 "
5/16 x 7/8	100	1 " 8 "	5/8 x 7/8	50	3 "
5/16 x 1	100	1 " 12 "	5/8 x 1	50	3 " 8 "
3/8 x 3/8	200	2 "	3/4 x 5/8	50	3 " 2 "
3/8 x 1/2	200	2 " 6 "	3/4 x 3/4	50	3 " 10 "
3/8 x 5/8	100	1 " 10 "	3/4 x 7/8	50	4 " 4 "
3/8 x 3/4	100	2 "	3/4 x 1	50	4 " 12 "
3/8 x 7/8	100	2 " 4 "	7/8 x 7/8	25	2 " 12 "
3/8 x 1	100	2 " 8 "	7/8 x 1	25	3 "
7/16 x 7/16	100	1 " 8 "	7/8 x 1 1/8	25	3 " 10 "
7/16 x 1/2	100	1 " 12 "	7/8 x 1 1/4	25	4 "
7/16 x 5/8	100	2 " 2 "	1 x 1	25	3 " 10 "
7/16 x 3/4	50	1 " 6 "	1 x 1 1/4	25	4 " 8 "

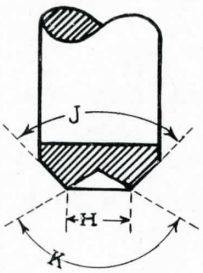


Dimensions of Allen Hollow Set Screws

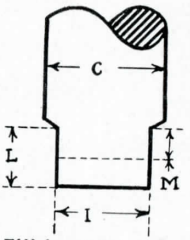
Standard Points



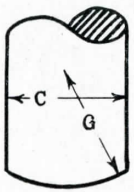
ROUND DOG POINT



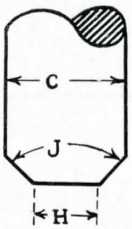
CUP POINT



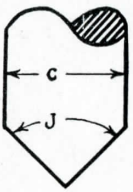
FULL DOG POINT
HALF " "



ROUND POINT



FLAT POINT



CONE POINT

DOG POINTS—When the length of dog equals half the total length of screw, half dog points furnished.

Diameter of Screw	G	H	I	J	K	L	M
1/4 inch	.250	.250	1/8	.163	90°	118°	1/8	1/16
5/16 "	.312	.312	5/32	.215	"	"	5/32	5/64
3/8 "	.375	.375	3/16	.265	"	"	3/16	3/32
7/16 "	.437	.437	7/32	.314	"	"	7/32	7/64
1/2 "	.500	.500	1/4	.355	"	"	1/4	1/8
9/16 "	.562	.562	9/32	.408	"	"	9/32	9/64
5/8 "	.625	.625	11/32	.461	"	"	5/16	5/32
11/16 "	.687	.687	"	.467	"	"	11/32	11/64
3/4 "	.750	.750	7/16	.567	"	"	3/8	3/16
13/16 "	.812	.812	"	.639	"	"	13/32	13/64
7/8 "	.875	.875	1/2	.682	"	"	7/16	7/32
15/16 "	.937	.937	"	.745	"	"	15/32	15/64
1 "	1.000	1.000	9/16	.783	"	"	1/2	1/4
1 1/8 "	1.125	1.125	5/8	.877	"	"	9/16	9/32
1 1/4 "	1.250	1.250	11/16	1.000	"	"	5/8	5/16
1 3/8 "	1.375	1.375	3/4	1.086	"	"	11/16	11/32
1 1/2 "	1.500	1.500	13/16	1.211	"	"	3/4	3/16

Short Lengths

We make a specialty of *short length* screws.

With the Allen process, Hollow Screws can be made much *shorter* than the diameter. Because the entire length of screw is utilized either for solid metal at the point, or depth of socket for the wrench. No waste space filled with chips as in broached screws.

Carried in Stock

Pages 6 and 7 will indicate that we carry Allen Safety Set Screws in all sizes from $\frac{1}{4}''$ to $1\frac{1}{2}''$ in diameter and up to 4″ in length — longer if required.

We furnish *every style point and thread at no extra cost.* Although this service adds greatly to stock requirements we feel it well justified by the better accommodation extended to our customers.

Consider these features when ordering: Any diameter, style of point, or form of thread at no extra cost — and every Allen Screw *guaranteed.*

Threads---USS Regularly Furnished

U. S. Standard: This type of thread has the flat top and bottom. It is used by all manufacturers throughout the United States, and is standard in Army and Navy specifications. All hollow screws we carry in stock have the U. S. S. thread, and this type is furnished unless otherwise specified.

S. A. E.: Same form of thread as the U. S. S., except for its having a finer pitch — more threads to the inch. This increases the frictional surface between the screw and tapped hole, making it less liable to loosen where vibration is great. For automotive and other moving equipment the S. A. E. thread has its advantages, and we can furnish screws so threaded within one week.

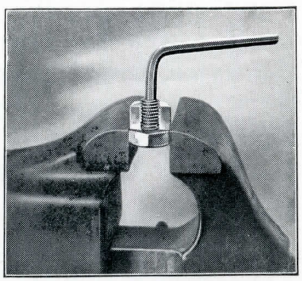
Whitworth: This is the British standard, having a *round* top and bottom instead of flat like the U. S. S. It can be furnished on Allen screws of any diameter specified. The British *fine* thread, comparable with our S. A. E., except for the round top and bottom, is coming into use for similar purposes to our S. A. E. It, too, is supplied on "Allens" when specified.

Metric: This is a French standard and Allen screws metric threaded can be supplied, on specification. At the time of compiling this catalogue, a Commission has under consideration certain changes in this thread, which may become effective as a result of the investigations.

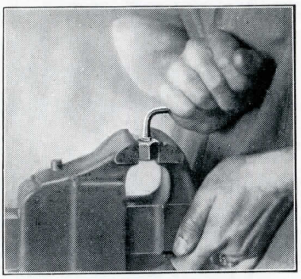
"V" Thread: This can be had on Allen screws, but is not recommended. It is weaker than other threads because of the deeper groove cut in the metal, and is easier to "start" under tensile strain or vibration. It is impractical to manufacture, and so seldom specified as to be styled obsolete.

Tests for Trying the Strength of Ordinary Hollow Screws--and ALLENS

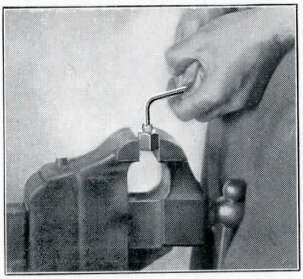
The following method has been used by Allen representatives for years in demonstrating the strength of the Allen screw by comparative tests. These tests are as readily made by the user of Hollow Screws as by Allen representatives; we will be glad to furnish the Test Block free of charge.

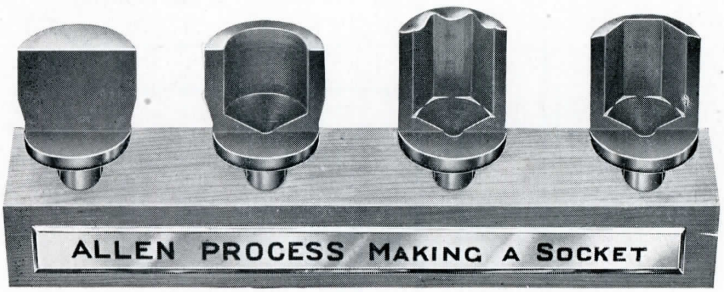


Set up in a vise a block like the one shown at right, (sectional view), threaded preferably for a ¼" set screw — other hollow screw manufacturers claim this size to be impractical. Turn in a screw from the lower end of the block, to serve as a plug during your tests. Then from the upper end turn in the screw to be tested, until it is flush with the top of the block and set tight against the screw underneath. Apply pressure as in the second view; turn with your whole force. If it's an ALLEN screw the socket will *hold* — will not break, ream out or mushroom.



Next loosen the screw until about half its length is *out* of the block. Insert the wrench to the bottom of the hexagon hole, then pull up on the handle as in the lower view. You will easily tear out or snap a broached screw, or any screw other than the Allen. But you'll break even the spring-tempered, alloy-steel Allen *wrench* before you'll break the Allen screw.





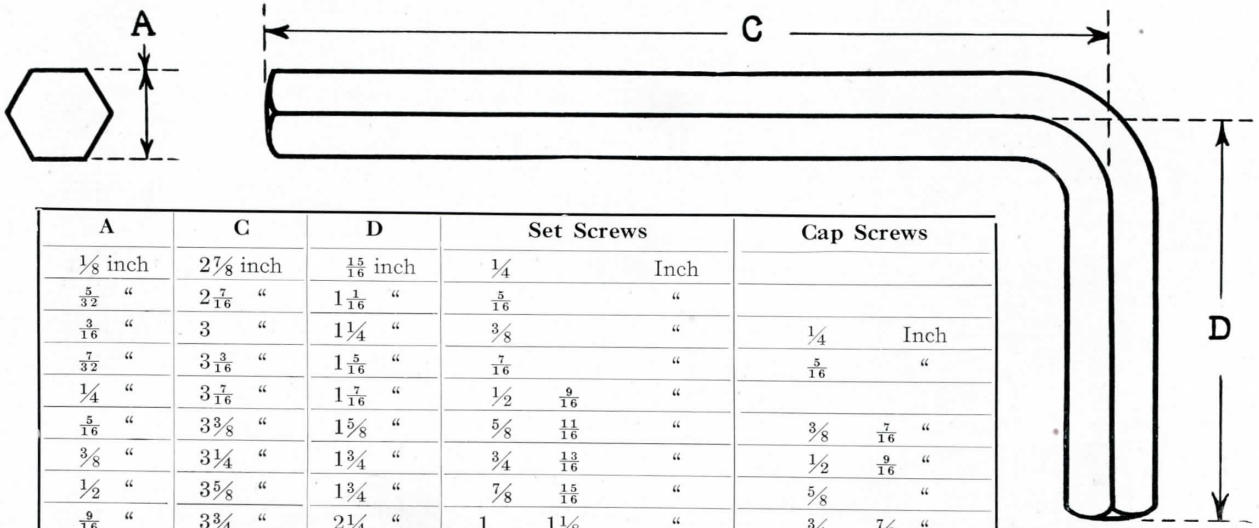
This shows the steps in making sockets in Allen Set Screws (and socket wrenches). First, the solid "blank" of special analysis steel. Second, the drilled-out socket, with the extra thickness of stock in the socket-wall. Third, the socket cold-drawn to the finished size — being driven through a die by a solid hex punch, tremendously compressed, walls reinforced. Fourth, the finished article, finely machined and scientifically heat-treated.

The result of this process is a *30% stronger* hollow screw, or a practically unbreakable wrench socket—as the case may be. It's the *only* cold-drawn socket; all others are broached the ordinary way and have only ordinary strength.

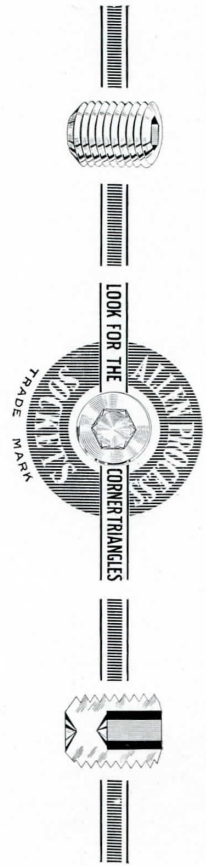
The four steps in the process indicated above apply as well to Allen Socket Head Cap Screws, Allen Pipe Plugs and Tap Extensions.

Wrench Sizes for

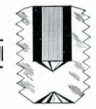
Allen Set Screws and Cap Screws

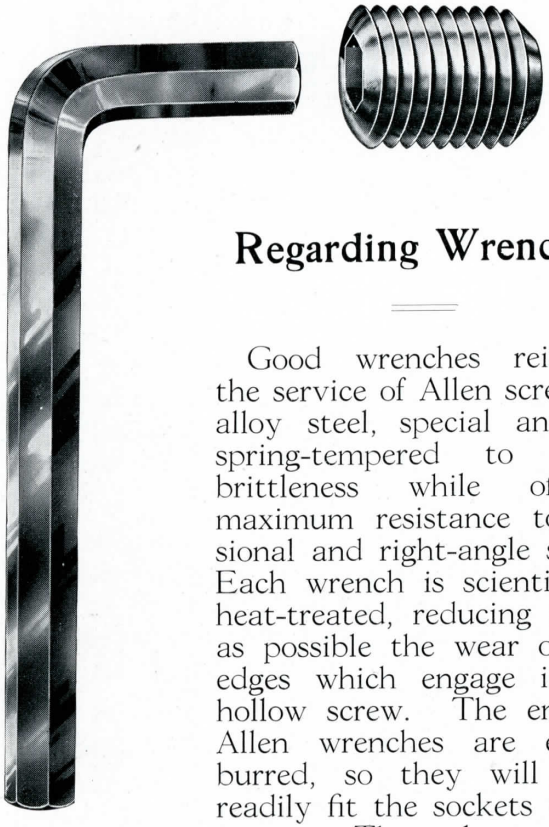


A	C	D	Set Screws	Cap Screws
1/8 inch	2 7/8 inch	15/16 inch	1/4 Inch	
5/32 "	2 7/16 "	1 1/16 "	5/16 "	
3/16 "	3 "	1 1/4 "	3/8 "	1/4 Inch
7/32 "	3 3/16 "	1 5/16 "	7/16 "	5/16 "
1/4 "	3 7/16 "	1 7/16 "	1/2 9/16 "	
5/16 "	3 3/8 "	1 5/8 "	5/8 11/16 "	3/8 7/16 "
3/8 "	3 1/4 "	1 3/4 "	3/4 13/16 "	1/2 9/16 "
1/2 "	3 5/8 "	1 3/4 "	7/8 15/16 "	5/8 "
9/16 "	3 3/4 "	2 1/4 "	1 1 1/8 "	3/4 7/8 "
5/8 "	4 3/4 "	2 1/4 "	1 1/4 1 3/8 1 1/2 "	1 "



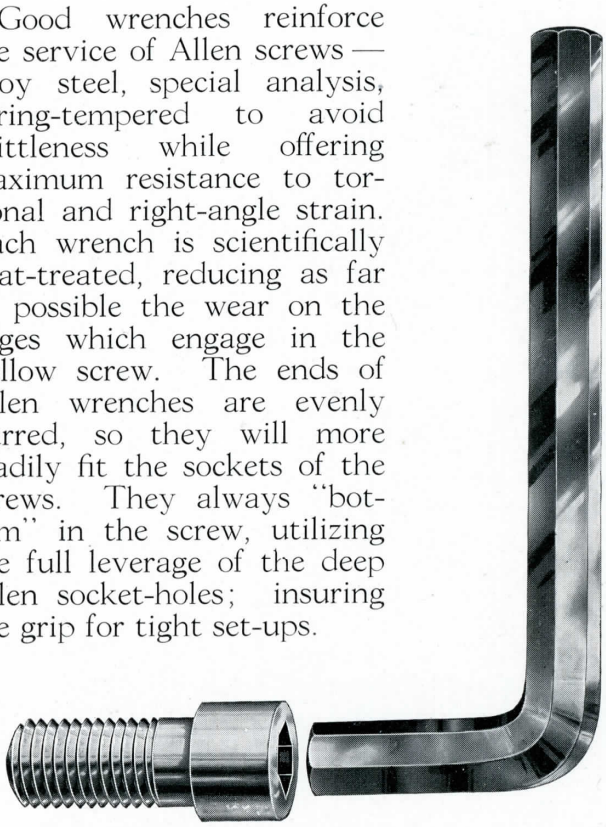
LOOK FOR THE CORNER TRIANGLES





Regarding Wrenches

Good wrenches reinforce the service of Allen screws — alloy steel, special analysis, spring-tempered to avoid brittleness while offering maximum resistance to torsional and right-angle strain. Each wrench is scientifically heat-treated, reducing as far as possible the wear on the edges which engage in the hollow screw. The ends of Allen wrenches are evenly burred, so they will more readily fit the sockets of the screws. They always "bottom" in the screw, utilizing the full leverage of the deep Allen socket-holes; insuring the grip for tight set-ups.



Socket Head Cap Screws

Users of Cap Screws have long realized the many disadvantages of the ordinary slotted head cap screw. After a little hard use the screwdriver slot becomes rounded off or spread so the screw can no longer be set up tight, and must be replaced. Even in the slight use incidental to setting up new machinery, the slot becomes battered and unsightly, making it necessary to put in new screws before the machines are sent out.

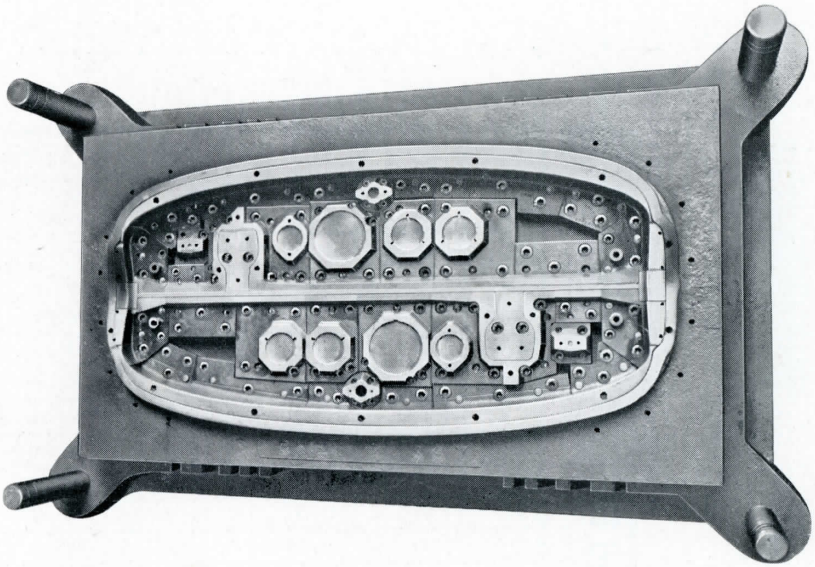
The Allen Cap Screws eliminate troubles due to slotted heads or to rounded corners of *external* hexagon head screws. They can be set up fully as hard as the ordinary cap screws and are much more convenient in close corners where there is not room to apply an "S" wrench.

Allen screws are all threaded accurately to standard gauges and are perfect in lead. The heads are turned true with the body of the screw, saving the bother and expense of grinding off the sides to make them fit the counterbore, as often is necessary with the slotted cap screws.

Allen Socket Cap Screws can be set up as hard and as often as you want without marring the heads, to the greatly improved appearance of your machine.

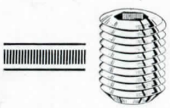
We can recommend and do *guarantee* these screws where *strength* and *looks* are large factors.

Socket Head Cap Screw Application to Die Work



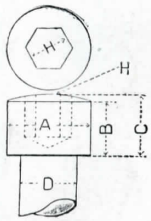
Most punch press and die work calls for frequent adjustment of the dies and punches. This means a constant tightening and loosening of screws—until they soon loosen without any help *if* slotted fillisters (or external hex cap screws) are used. The slotted screw soon loses its grip on the screwdriver, wastes time on set-ups and money on replacements. The hexagon head cap screw rounds off, allows wrench-play, defeats efforts to set it tight.

The above photograph of a die shows some hundred and fifty Allen Socket Head Cap Screws in place. These set up in counter-bored holes without ever a need of grinding off the sides of the head—so commonly necessary with *slotted* cap screws. Allen heads being finished *all over*, the tops, sides and under-surfaces are turned true to the body of the screw. The Allen wrenches give greater purchase than any screwdriver in heavy die work such as illustrated, and firmer leverage than *projecting head* cap screws—if those could be used in places like this.



LIST PRICES AND SIZES

ALLEN SOCKET HEAD CAP SCREWS

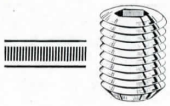


A Diameter of Head.
B Oval Head Length of Side.
C Length of Flat Head.
D Diameter of Screws.
H Size of Hex. Hole

Screws 4″ long and over are threaded ½ the length. Under 4″ long ⅔ way.

Longer lengths than listed require a special quotation.

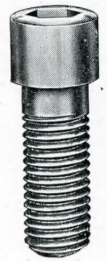
LENGTH UNDER HEAD TO EXTREME POINT	DIAMETER OF SCREWS				
	¼	5/16	⅜	7/16	½
¾	$6.00	$7.00	$8.00	$9.00	$10.00
1	6.50	7.50	8.50	9.50	10.50
1¼	7.00	8.00	9.00	10.00	11.00
1½	7.50	8.50	9.50	10.50	11.50
1¾	8.00	9.00	10.00	11.00	12.00
2	8.50	9.50	10.50	11.50	12.50
2¼	9.00	10.00	11.00	12.00	13.00
2½	9.50	10.50	11.50	12.50	13.50
2¾	10.00	11.00	12.00	13.00	14.00
3	10.50	11.50	12.50	13.50	14.50
3¼	11.00	12.00	13.00	14.00	15.00
3½	11.50	12.50	13.50	14.50	15.50
3¾			14.00	15.00	16.00
4			14.50	15.50	16.50
4¼				16.00	17.00
4½				16.50	17.50
4¾					18.00
5	PRICES ARE PER 100 SCREWS WRENCHES INCLUDED				18.50
5¼					19.00
5½					19.50
5¾					20.00
6					20.50
U.S.S THREADS PER IN.	20	18	16	14	13
S.A.E THREADS PER IN.	28	24	24	20	20
WHITWORTH THREADS PER IN.	20	18	16	14	12
A DIAMETER OF HEAD.	3/8	7/16	9/16	5/8	¾
B OVAL HEAD LENGTH OF SIDE.	15/64	9/32	21/64	13/32	15/32
C LENGTH OF FLAT HEAD.	¼	5/16	3/8	7/16	½
H SIZE OF HEX. HOLE.	3/16	7/32	5/16	5/16	3/8
WRENCHES FREE PER 100 SCREWS	4	4	4	4	4
EXTRA WRENCHES EACH.	.05	.06	.08	.08	.10

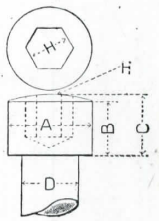


LIST PRICES AND SIZES

ALLEN SOCKET HEAD CAP SCREWS

LENGTH UNDER HEAD TO EXTREME POINT	DIAMETER OF SCREWS				
	9/16	5/8	3/4	7/8	1
3/4					
1	$11.00	$20.00			
1 1/4	11.50	20.50			
1 1/2	12.00	21.00	$23.00		
1 3/4	12.50	21.50	23.75	$38.00	
2	13.00	22.00	24.50	39.00	$45.00
2 1/4	13.50	22.50	25.25	40.00	47.00
2 1/2	14.00	23.00	26.00	41.00	49.00
2 3/4	14.50	23.50	26.75	42.00	51.00
3	15.00	24.00	27.50	43.00	53.00
3 1/4	15.50	24.50	28.25	44.00	55.00
3 1/2	16.00	25.00	29.00	45.00	57.00
3 3/4	16.50	25.50	29.75	46.00	59.00
4	17.00	26.00	32.00	47.00	61.00
4 1/4	17.50	26.50	33.25	48.00	63.00
4 1/2	18.00	27.00	34.50	49.00	65.00
4 3/4	18.50	27.50	35.75	50.00	67.00
5	19.00	28.00	37.00	51.00	69.00
5 1/4	19.50	28.50	38.25	52.00	71.00
5 1/2	20.00	29.00	39.50	53.00	73.00
5 3/4	20.50	29.50	40.75	54.00	75.00
6	21.00	30.00	42.00	55.00	77.00
U.S.S THREADS PER IN.	12	11	10	9	8
S.A.E THREADS PER IN.	18	18	16	14	14
WHITWORTH THREADS PER IN.	12	11	10	9	8
A DIAMETER OF HEAD.	13/16	7/8	1	1 1/8	1 1/4
B OVAL HEAD LENGTH OF SIDE.	33/64	37/64	45/64	53/64	61/64
C LENGTH OF FLAT HEAD.	9/16	5/8	3/4	7/8	1
H SIZE OF HEX. HOLE.	3/8	1/2	9/16	9/16	5/8
WRENCHES FREE PER 100 SCREWS	4	4	4	4	4
EXTRA WRENCHES EACH.	.10	.12	.15	.15	.20





A Diameter of Head.
B Oval Head Length of Side.
C Length of Flat Head.
D Diameter of Screws.
H Size of Hex. Hole

Screws 4″ long and over are threaded 1/2 the length. Under 4″ long 2/3 way.

Longer lengths than listed require a special quotation.

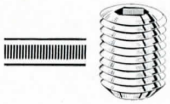
Allen Tap Extensions

Set consists of 2 pieces, 4″ and 6″ long respectively, (10 inches in combination) and may be used on all standard taps from 1/4″ to 1″.

Price List

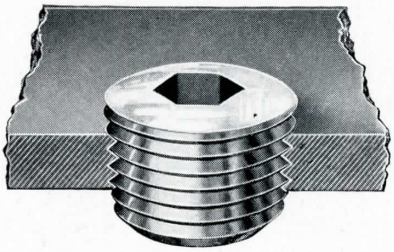
Tap Size	Size of Square of Tap Shank	Size of Hole in Tap Extension	Set of 2 Pieces
1/4	.192	.192	$2.00
5/16	.240	.240	2.25
3/8	.206	.206	2.25
7/16	.240	.240	2.25
1/2	.280	.280	2.50
5/8	.357	.357	3.00
3/4	.440	.440	3.50
7/8	.522	.522	4.00
1	.595	.595	5.00

The squares and socket openings conform to the standard used generally by leading Tap Manufacturers, **and where some makes have shanks with the squares slightly larger than this standard, the taps should be ground to fit sockets.**



Allen Pipe Plugs

—made by the process that produces the 30% stronger Hollow Screws



This plug gives *service* where a malleable, cast or broached cold-rolled plug gives trouble. The socket is formed by the Allen process of cold-drawing, which increases the density of the steel around the socket-hole and adds to its strength beyond that obtainable by any hardening process. The socket is clean and perfectly-formed all the way down, so the wrench always "bottoms" in the plug — fitting snugly.

The hexagon socket of the "Allen" takes the spring-tempered, alloy steel Allen wrench with the same perfect grip as an Allen Safety Set Screw. Each plug is case-hardened to resist surface wear, and to meet practically any chemical condition (can be sherardized if especially ordered). Accurately threaded and perfect in lead; every plug *guaranteed*.

	Plugs per hundred	Extra Wrenches each
1/8″	$5.00	.05
1/4″	7.00	.07
3/8″	10.00	.08
1/2″	12.00	.10
3/4″	20.00	.15

Eight wrenches furnished free with each hundred plugs of 1/8″, 1/4″, 3/8″, or 1/2″ size.

Four wrenches furnished free with each hundred plugs of 3/4″ size.

Socket Wrench Section

The following pages show the ALLEN Line of socket wrenches, as they appear in assembled sets.

Our friends will realize we can only illustrate the form and design of these wrenches; we cannot show the quality, the workmanship, the strength manifest in examining the tools themselves.

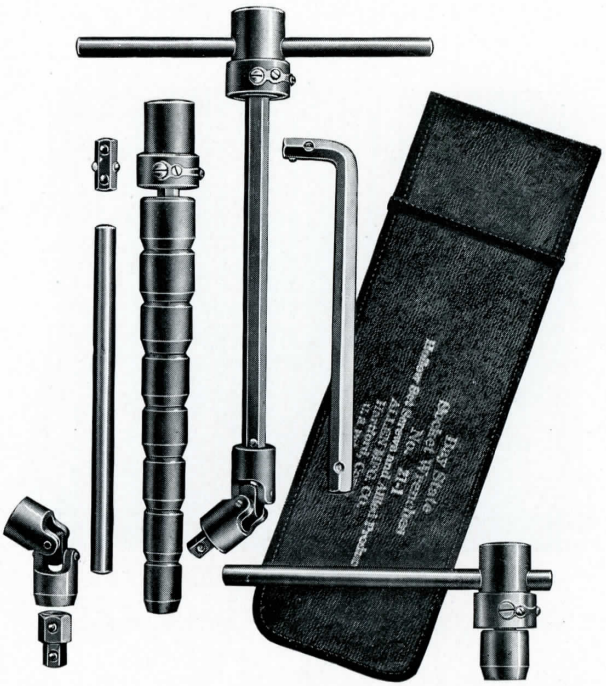
Nor can we really describe here the durability or service-life of Allen wrenches, for there is nothing in the past or present of wrench-making by which to compare them.

All that can be claimed for these wrenches, and seemingly the most that can be claimed for any wrenches, is embodied in the guarantee on the last page of this section. That, we believe, is the best place for claims — where they are unreservedly backed.

Many important new features will be noted under the various sets. Chiefly, we have displaced the weak, *broached* socket with the ALLEN-Process socket, cold-drawn from special analysis steel and scientifically heat-treated. (The same process always employed in making Allen Hollow Set Screws).

Besides building into Allen Sets the most permanent service, we have sought to extend that service in every useful direction — by supplying the wrenches in combinations covering every requirement of mechanics, car owners, millwrights, erectors and all who have need of tools, *unbreakable* in practical use.

Number 21-1 Set



Complete, all-round Bag Set for Mechanics

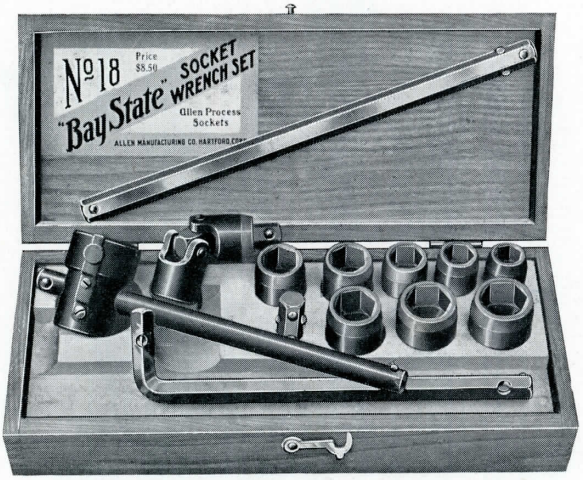
Takes the place of 149 different wrenches! The wrench itself can be used either as a reversible ratchet or solid wrench, with or without extension bar: (see illustration). The ratchet is of the very stoutest construction. The set includes (besides the Combination Reversible Ratchet and Solid Wrench), 1 Bent Bar, 1 Long Extension Bar, 1 Short Extension Bar for use when wrench is applied direct to socket — either solid or ratchet; a No. 4 Universal Joint and 8 Allen-process (cold-drawn) sockets of the following sizes:

7/16″, 1/2″, 9/16″, 19/32″, 5/8″, 11/16″, 3/4″, 25/32″

All sockets chamfered for close work and guaranteed against breakage

Set assembled in heavy, durable bag, list price $7.00

Number 18 Set



Complete, all-around Set for Mechanics

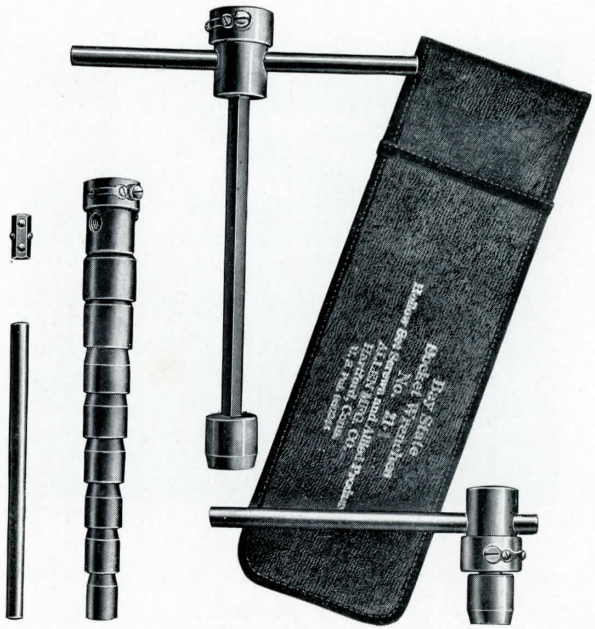
Takes the place of 149 different wrenches. The wrench itself can be used either as a reversible ratchet or solid wrench, with or without extension bar: (see illustration). The ratchet is of the very stoutest construction. The set includes, (besides the Combination Reversible Ratchet and Solid Wrench), 1 Bent Bar, 1 Long Extension Bar, 1 Short Extension Bar for use when wrench is applied direct to socket — either solid or ratchet; a No. 4 Universal Joint and 8 Allen-process (cold-drawn) sockets of the following sizes:

7/16″; 1/2″; 9/16″; 19/32″; 5/8″; 11/16″; 3/4″; 25/32″

All sockets chamfered for close work and guaranteed against breakage

Set assembled in hardwood box, list price $8.50

Number 21 Set



Combines in one compact outfit practically every wrench needed around the car or repair shop. Very handy also for assembling and millwright work. The wrench can be used either as a reversible ratchet or solid wrench, with or without extension bar (see illustration). The ratchet is the strongest and most serviceable that can be made. Included in set besides the Combination Reversible Ratchet and Solid Wrench, is one Extension Bar, one Removable Adapter for use when wrench is applied direct to socket — either solid or ratchet, and 8 Allen-process (cold-drawn) sockets of the following sizes:

7/16″, 1/2″, 9/16″, 19/32″, 5/8″, 11/16″, 3/4″, 25/32″

All sockets chamfered for close work and guaranteed against breakage

Set assembled in heavy, durable bag, list price $5.00

Box Set No. 19

Many-use combination Wrench Set with hexagon and square sockets

Comprises 1 Allen Ratchet Wrench (to be used either as a reversible ratchet or solid wrench); 1 9½" Extension Bar; 1 Short Extension Bar; 1 Offset Handle; 1 Universal Joint; 9 Allen-process hexagon sockets and 3 Allen-process square sockets — cold-drawn and guaranteed against breakage. Sizes of hexagon sockets:

7/16", 1/2", 9/16", 19/32", 5/8", 11/16", 3/4", 25/32" and 13/16"

Sizes of square sockets: 1/2", 19/32", 11/16"

All sockets chamfered for close work and guaranteed against breakage

Set assembled in Hardwood Box, list price $10.00

(Shipping weight, 5 lbs., 13 oz.)

Box Set No. 20

Complete mechanic's outfit with Interchangeable Speed Wrench. 272 Distinct Combinations.

Includes 1 Allen Ratchet Wrench (can be used either as a reversible ratchet or solid wrench); 1 9½" Extension Bar; 1 Short Extension Bar; 1 Offset Handle; 1 Universal Joint; 10 Allen-process hexagon sockets and 3 Allen-process square sockets; also 1 Interchangeable Speed Wrench (for all sizes of sockets). The hexagon socket sizes are:

7/16", 1/2", 9/16", 19/32", 5/8", 11/16", 3/4", 25/32", 13/16" and 7/8"

The square socket sizes are: 1/2", 19/32", 11/16"

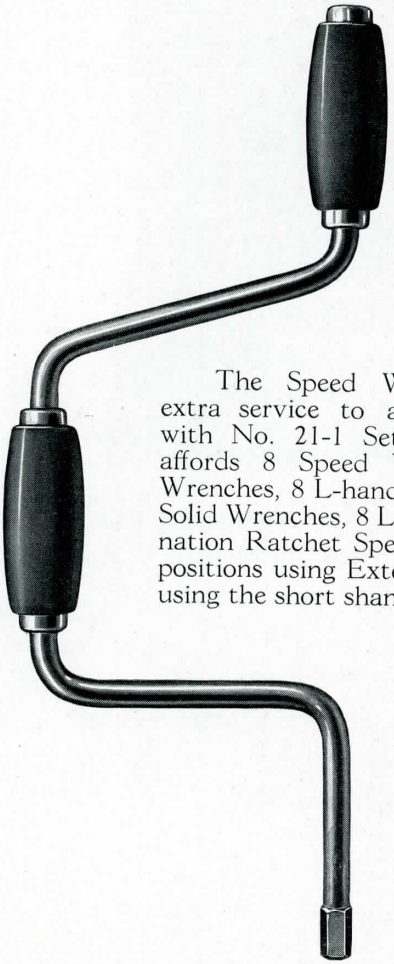
All sockets chamfered for close work and guaranteed against breakage

Set assembled in Hardwood Box, list price $13.00

(Shipping weight, 8 lbs.)

Interchangeable Speed Wrench

Multiplies the usefulness of all Allen Sets



Fits all sizes of Allen sockets — hexagon and square. Can also be used in combination with the Allen Ratchet Wrench-head, serving then as a Ratchet Speed Wrench. Further, by using our $\frac{7}{16}''$ socket as an adapter in connection with the Extension Bar furnished with the Allen Sets, a reach of nearly 14 inches may be secured.

The Speed Wrench gives a wide range of extra service to any Allen Set. Taken together with No. 21-1 Set for example, the combination affords 8 Speed Wrenches, 8 T-handle Ratchet Wrenches, 8 L-handle Ratchet Wrenches, 8 T-handle Solid Wrenches, 8 L-handle Solid Wrenches, 8 Combination Ratchet Speed Wrenches — with 48 different positions using Extension Bar and the same number using the short shank or adapter.

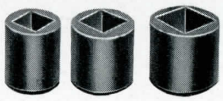
The Allen "*Interchangeable*" is a fine, workmanlike tool, built for the service it's sure to see. The brace is of special analysis, cold-rolled steel. The handles (or swivels) are of hard wood rather than metal — preferred by many for cold-weather work. The head is fitted with spring friction balls to hold sockets in place when in use.

List Prices

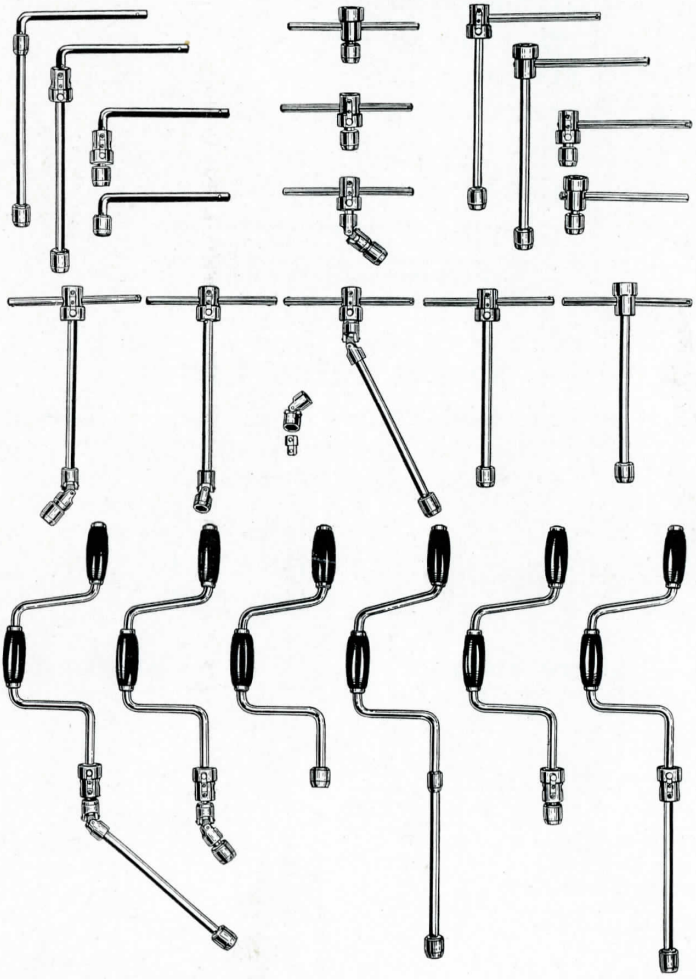
No. 45 (4″) $1.50
No. 46 (10″) $1.60

Shipping wgt. 1 lb., 4 oz.

These Allen Process Cold Drawn Sockets—



—with our No. 20 Standard Wrench Attachments *give the 272 wrench combinations shown below.*



List of Wrench Parts

Part Number		List Price
100	Ratchet Complete	$3.00
101	Allen Ratchet Head	2.50
102	Cross Bar	.25
103	Short Extension Bar	.30
104	9½" Long Extension Bar	.50
105	Offset Handle	.50
107	4th Bearing Universal, complete	1.75
108	4th Bearing Universal	1.50
109	4th Bearing Universal Adapter	.30

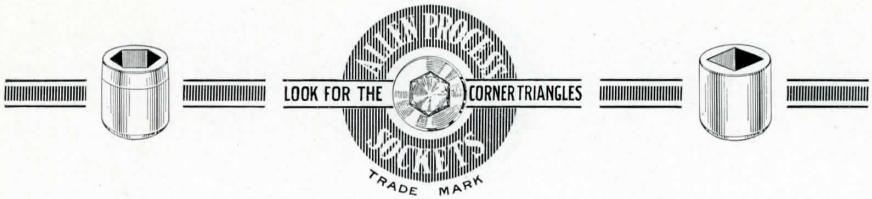
The No. 4 Universal Joint supplied with this set serves for Ford fourth bearing work and when combined with Special Adapter (furnished) can be used for all "universal" work.

Socket Price List

Hex.		List Price	Hex.		List Price
111	7/16"	$.30	116	11/16"	$.30
112	1/2"	.30	117	3/4"	.40
113	9/16"	.30	118	25/32"	.40
114	19/32"	.30	119	13/16"	.40
115	5/8"	.30	120	7/8"	.40

Square Sockets		List Price
130	1/2"	$.40
131	19/32"	.40
132	11/16"	.40

Part Number		List Price
45	Speed Wrench 4"	1.50
46	Speed Wrench 10"	1.60



Socket Sizes

7-16 Hex. Sockets Fit.....1/4″ S. A. E. Nuts
1/4″ S. A. E. Cap Screws
1/4″ U. S. S. Cap Screws

1-2 Hex. Sockets Fit.....1/4″ U. S. S. Nuts
5/16″ S. A. E. Nuts
5/16″ S. A. E. Cap Screws
5/16″ U. S. S. Cap Screws

9-16 Hex. Sockets Fit.....3/8″ S. A. E. Nuts
3/8″ S. A. E. Cap Screws
3/8″ U. S. S. Cap Screws

19-32 Hex. Sockets Fit.....5/16″ U. S. S. Nuts

5-8 Hex. Sockets Fit.....7/16″ S. A. E. Nuts
7/16″ S. A. E. Cap Screws
7/16″ U. S. S. Cap Screws

11-16 Hex. Sockets Fit.....3/8″ U. S. S. Nuts

3-4 Hex. Sockets Fit.....1/2″ S. A. E. Nuts
1/2″ S. A. E. Cap Screws
1/2″ U. S. S. Cap Screws

25-32 Hex. Sockets Fit.....7/16″ U. S. S. Nuts

13-16 Hex. Sockets Fit.....9/16″ U. S. S. Cap Screws

7-8 Hex. Sockets Fit.....5/8″ U. S. S. Cap Screws
1/2″ U. S. S. Nuts
9/16″ S. A. E. Nuts
9/16″ S. A. E. Cap Screws

Guarantee

WE GUARANTEE every Allen Wrench against breakage in use. We further guarantee that Allen-process sockets will not ream or round out or by any fault lose their grip on the nut or bolt.

We will replace free of charge whatever part or parts of an Allen Wrench may prove defective either in workmanship or material.

We would thank any of our customers for calling attention to any shortcoming, real or apparent, in the construction or service of Allen Wrenches.

The Allen Manufacturing Company
Hartford, Connecticut, U. S. A.